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§ 99. **Ballast Plants in and near New York City.**—In continuation of the lists of adventive plants found in and near this city in 1878 and 1879, previously reported in the BULLETIN (Vol. VI, pp. 256, 273, and 355), I give below the additional species found during the past season in the same localities.

The ballast grounds, however, at Hunter's Point, so fertile last year in species new to this region, and most of the grounds at Gowanus, have been almost wholly occupied for business uses, so that scarcely anything could be gathered there.

At Communipaw Ferry, also, the ballast deposits have been frequently dug up or covered; and since the middle of July a corps of laborers has been constantly employed in traversing the grounds about the railroad tracks where most of the plants were procured, and in digging up by the roots all traces of vegetation. What has been obtained there has been found during the intermission of their ravages.

At the 8th Avenue station and at 107th Street the grounds have been mainly undisturbed, as have a part of the grounds at Communipaw and Hoboken. It is somewhat remarkable that so many new species have been found this year on these old deposits, as the seeds must have been brought there with the ballast at least four years ago, and would have been noticed had they produced plants last year.

The greater part of the plants from Communipaw in the following list are, however, from *new* ballast earth used for filling about the railroad tracks, though the "wharf" before referred to has been undisturbed.

In May, and again in July, Mr. Martindale, who in previous years has collected so many ballast plants from the deposits about Philadelphia and Camden, went over our chief localities, and a number of the following species were first noticed by him as indicated in the list subjoined. I am indebted to him also as well as to Mr. Jones, at the Cambridge Herbarium, for the determination of some other species, and to Dr. Thurber for grasses.

A few corrections should be made in the list for last year.

No. 76, for *Brassica monensis* read *B. CHEIRANTHUS, Vill.

No. 117, for *Trifolium elegans* read T. HYBRIDUM.

No. 182 is *Echium vulgare*, with long spreading branches, very different in appearance from the usual form.

No. 240, for *Anthericum ramosum*, read *ASPHODELUS RAMOSUS, L. (A. microcarpus, Vis.)

Of the 258 species previously reported, upwards of 200 were found again this year; and if the species be omitted that were only found last year at the stations at Hunter's Point and Gowanus since destroyed, more than nine-tenths of last year's species re-appeared this year at the same localities.

In the following list the plants not in Gray's Manual are printed in *italics* or in small CAPITALS, the latter designating such as are not known to the writer to have been previously published as found in this country. Those not previously reported within our local limits (30 miles) are indicated by an asterisk (*); and the dagger (†) indi-

cates those which Mr. Martindale reports also from Philadelphia or Camden. The station near Communipaw Ferry is indicated by "Com."; Hoboken by "Hob."; Hunter's Point by "H. Pt.", and Gowanus by "Gow." Where not otherwise stated the plants are believed to be European. A number belong to the shores of the Mediterranean, a few are from South America, and others from the Southern or South-western States:

- †259.* *Ranunculus arvensis*, L.—May–June. Com. 8th Ave.
 260.* *RANUNCULUS LANUGINOSUS*, L.—May. Com. 1 plant only. Wharf.
- †261.* *Papaver Argemone*, L.—May–June. 107th St., 8th Ave.
 †262. *Argemone Mexicana*, L.—July. Com. 1 plant.
 †263.* *Eschscholtzia Californica*, Cham.—June. Com. 1 plant Cal.
 †264.* *Sisymbrium Irio*, L.—June–July. Com. 8th Ave.
 76. *BRASSICA CHEIRANTHUS*, Vill.—June–July. Hob. Abundant.
 †265.* *Diplotaxis muralis*, DC.—May–July. 107th St. Same as var. *integrifolia* in former No. 75.
 †266.* *DIPLOTAXIS ERUCOIDES*, DC.—Aug.–Oct. Com. Flowers white.
 †267.* *Lepidium intermedium*, Gray.—May–June. Com. Western.
 268.* *LEPIDIUM SMITHII*, Hook.—July. Com. 2 plants. (Martindale.)
 269.* *IONIDIUM PARVIFLORUM*, (?)—Aug.–Sept. Com. So. Am.
 †270.* *Dianthus barbatus*, L.—July. Com. Both white and pink flowers.
 271.* *SILENE ITALICA*, Pers.—June–July. Com. Wharf,
 272.* *SILENE PENDULA*, L.—July. Com. 1 plant.
 †273.* *Lychnis diurna*, Sibth.—May–July. Com. Wharf. 8th Ave.
 274.* *Lychnis Flos-cuculi*, L.—May. Com. Wharf. 1 plant.
 †275.* *Stellaria aquatica*, Scop. (*Cerastium*, L.)—Aug.–Oct. 8th Ave.
 †276.* *Corrigiola littoralis*, L.—June–Nov. Com. Spreads upon the sand like carpet-weed. An interesting addition to our few representatives of the order *Paronychieae*.
 †277.* *Malvastrum tricuspidatum*, Gray.—Sept. Com. Scarce. S. W.
 †278.* *Sida carpinifolia*, L., var. *brevicuspidata*, Griseb. (*S. stipulata*, Cav.)—Sept. Com. S. W.
 279.* *Pavonia hastata*, Cav.—(*P. Lecontei*, T. & G.) Sept. Com. 2 plants. S. W.
 280.* *Waltheria Americana*, L.—Sept. Com. Not in flower. S. W.
 †281.* *Geranium molle*, L.—May. 107th St.
 †282.* *Geranium dissectum*, L.—May. Com.
 †283.* *ERODIUM MALACHOIDES*, Willd.—May. 107th St.
 †284.* *Oxalis corniculata*, L.—Sept.–Oct. Com. Stipules small but evident.
 †285.* *ONONIS REPENS*, L.—July. 107th St. Prostrate; spines 9". *O. arvensis*, L. was also found again this year at 8th Ave. It resembles *O. repens*, but is wholly without spines.
 †286.* *ONONIS SPINOSA*, L.—June. Hob. Sub-erect; branches spreading, rigid, thorny.

- †287.* TRIGONELLA CAERULEA, Ser.—July. 8th Ave. (Martindale.)
 †288.* ANTHYLLIS VULNERARIA, L.—June–July. Com. 8th Ave.
 Also var. *rubiflora* (*A. Dilenii*, Schultz.)
 †289.* TRIFOLIUM MARITIMUM, Huds.—July. 8th Ave. (Martindale.)
 1 plant.
 290.* TRIFOLIUM DALMATICUM, Vis. (?).—July. 8th Ave. One plant;
 may be *T. tenuiflorum*, Ten.; it has the long axillary
 sessile heads of *T. striatum*, but the smoother, rigid
 leaves of *T. scabrum*, with similar beautifully-arched
 veinlets; plumose teeth of calyx unequal, exceeding its
 tube, and equalling half the rosy corolla; decumbent.
 †291.* MEDICAGO MARGINATA, Willd.—July. Com. Wharf.
 †292.* *Medicago falcata*, L.—July. Hob. (Martindale.)
 †293.* *Medicago minima*, Lam.—May–Aug. Com. 8th Ave.
 †294.* MELILOTUS SULCATA, Desf.—July. Com.
 295.* DORYCNium HIRSUTUM, DC., (*Lotus*, L.)—May–June. Com.
 Wharf.
 296.* ORNITHOPUS COMPRESSUS, L.—Sept. Com. 1 plant. S. Am.
 297.* ASTRAGALUS GLYCYPHYLLOS, L.—May–Aug. Com. Wharf.
 298.* ADESMIA MURICATA, DC., var. DENTATA. (?).—Aug. Com. 1
 plant. Chili.
 †299.* *Vigna luteola*, Benth. (*V. glabra*, Sav.)—Sept. Com. Young
 pods very hairy.
 300.* VICIA HYBRIDA, L.—May–July. 107th St. Standard and pods
 hairy. Flowers yellow.
 301.* *Rhynchosia minima*, DC.—Oct. Com. South.
 302.* *Desmanthus brachylobus*, Benth.—Sept. Com. W.
 †303.* *Poterium Sanguisorba*, L.—June–Aug. 8th Ave. Com.
 †304.* *Alchemilla arvensis*, Scop.—H. Pt. (J. Schrenk, 1879.)
 305.* *Potentilla recta*, L.—July. 8th Ave. (Martindale.)
 306.* *Aptium leptophyllum*, F. Muell. (*Helosciadium*, DC.) Com. S.W.
 307.* HERACLEUM SPONDYLUM, L.—July. 8th Ave.
 †308.* *Anethum graveolens*, L.—July. 8th Ave.
 309.* CHAEROPHYLLUM TEMULUM, L.—June–July. Com.
 †310.* *Scandix Pecten-Veneris*, L. May. Com. (Martindale.)
 †311.* GALIUM PALUSTRE, L.—July. 8th Ave.
 †312.* *Richardsonia scabra*, St. Hil.—Aug.–Sept. Com. S. Am.
 †313.* *Fedia olitoria*, Vahl.—May. 8th Ave.
 †314.* *Dipsacus sylvestris*, Mill.—July. 8th Ave.
 314a.* BUPHTHALMUM SALICIFOLIUM, L.—July. Hob. 1 plant.
 Shortly afterwards plants all cut down.
 †315.* *Eclipta erecta*, L.—July. Com. Quite erect. South. 3°.
 †316.* *Acanthospermum hispidum*, DC.—July–Aug. Com. South.
 †317.* *Achillea Ptarmica*, L.—July. Com. Scarce.
 318.* CENTAUREA PHRYGIA, L.—July. Com. Appendages very
 long recurved fimbriate.
 †319.* *Senecio Jacobaea*, L.—July–Aug. 8th Ave. Hob. (Mar-
 tindale).
 †320. *Onopordon acanthium*, L.—July. 8th Ave. Hob. (Mar-
 tindale).

- †321.* *Carduus acanthoides*, L.—July–Aug. 8th Ave. Hob. (Martindale).
 322.* *CARDUUS CRISPUS*, L.—July. 8th Ave.
 323.* *CARDUUS MULTIFLORUS*, Gaud.—July–Aug. Gow.
 172.* *HIERACIUM UMBELLATUM*, L.—Aug. Com. 1 plant. No. 172 of last year.
 †324.* *Picris hieracioides*, L.—July. Com. Wharf. (Martindale).
 †325.* *Scolymus Hispanicus*, L.—July. H. Pt. Hob.
 †326.* *Heliotropium Curassavicum*, L.—July–Oct. Com.
 †327.* *Heliotropium anchusaefolium*, Poir.—July–Aug. Com.
 †328.* *Heliotropium Indicum*, L.—June. Com.
 †329.* *BORRAGO OFFICINALIS*, L.—July. 8th Ave. 1 plant.
 †330.* *MYOSOTIS COLLINA*, Hoff. (*M. hispida*, Schlecht.)—Aug. Com.
 †331.* *Myosotis arvensis*, Hoff. (*M. intermedia*, Link)—Aug. Com.
 †332. *Symphytum officinale*, L.—July. Com. Hob. The latter with purple flowers.
 333.* *Dichondra repens*, Forst.—Sept. Com. Not in flower. S.
 †334. *Ipomoea coccinea*, L. (*Quamoclit*, Moench.)—Sept. Com. South.
 †335.* *Ipomoea commutata*, R. & S.—Oct. Com. South.
 †336. *Solanum nigrum*, var. *Dillenii*, Gray (sp. Schult.)—Sept.–Oct. Com.
 †337.* *Solanum sisymbriifolium*, Lam.—July. 8th Ave. Gow. Also in 1879. South.
 338. *Solanum tuberosum* (?)—July–Oct. Com. Perfectly regular leaflets, filamentary white roots, no tubers. West.
 †339.* *Hyoscyamus albus*, L.—July. Com. (Martindale).
 340.* *DIGITALIS LUTEA*, L.—July. 8th Ave. 1 plant.
 †341.* *Scoparia flava*, C. & S.—Sept. Com. 2 plants. So. Am.
 †342. *Veronica hederæfolia*, L.—May–Aug. 8th Ave. Hob. Com.
 †343.* *Orobanchè minor*, Sutt.—May. 107th St. 1 plant.
 344.* *AJUGA GENEVENSIS*, L.—May–June. 107th St. Scarce.
 †345. *Origanum vulgare*, L.—Aug.–Sept. 8th Ave.
 †346.* *Salvia verbenaca*, L.—Aug. Com. 1 plant.
 †347.* *Galeopsis angustifolia*, Ehrh. (*G. Lad.* var. *ang.*)—July–Oct. 8th Ave. Abundant.
 348.* *GALEOPSIS VERSICOLOR*, Curt.—July. Com.
 †349.* *STACHYS RECTA*, L.—July–Aug. Com. Wharf. (Martindale.)
 †350.* *Plantago coronopus*, L.—June. Gow.
 †351.* *Amarantus blitoides*, Watson.—July. 8th Ave. (Martindale.)
 352.* *Cladothrix lanuginosa*, Moq. (*Alternanthera*, DC.)—July–Sept. Com. S. W.
 353. *Polygonum ramosissimum*, Michx.—July. 8th Avenue. (Martindale.)
 †354.* *Phyllanthus polygonoides*, Spreng.—Sept. Com. Mex.
 †355.* *CYPERUS UMBELLATUS*, Vahl.—Sept. Com. China?
 †456.* *Carex hirta*, L.—May. 8th Ave. (Martindale.)
 357.* *PHLEUM ARENARIUM*, L.—May. 8th Ave. (Martindale.)
 †358.* *Sporobolus Indicus*, Br.—Sept. Com.
 359. *Eleusine Indica*, var. **BRACHYSTACHYS*, Trin.—Sept. Com.

- 360.* GLYCERIA PROCUMBENS, Sm.—June. 8th Ave.
 361. Poa trivialis, L.—May. 107th St.
 †362.* Festuca Myurus, L.—May. 107th St.
 †363.* Hordeum murinum, L.—July. Com. 8th Ave.
 364.* Paspalum distichum, L.—June–Aug. Com. So.
 365.* Equisetum variegatum, Schlecht.—June. Com.

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ADDISON BROWN.

§ 100. **The Value of Herbaria.**—The following extracts from *La Phytographie par Alph. De Candolle, Paris, 1880*, merit the consideration of those who may have it in their power to promote the growth of our public collections of dried plants:

The purposes of Herbaria are to acquaint us with the exact names of plants, to furnish the materials necessary for their description, and to preserve the evidences or explanations in regard to descriptions already published.

Collections of this nature are superior to those we can have in Zoology. Dried plants are in a condition of completeness or nearly so, whereas shells, skeletons or stuffed animals exhibit merely certain portions of the organism. They have usually several flowers or fruit, and these admit of additional dissection for their verification. Specimens are so little altered in drying, that it is easy by means of a simple immersion to view the most minute and delicate organs. In certain cases we see them even better than in the living plant; as for instance when we examine ovules involved in a pulpy substance, or membranes that become very nicely separated by desiccation.

If we compare collections of dried plants with those of living ones, the respective advantages are more evenly balanced than is generally supposed. In a Herbarium we see simultaneously specimens of neighboring species, and of those from different localities; also specimens of different ages, or of different states of the same species. We know the name of the plant if the collection has been well determined, and are referred directly to the authors who have spoken of it. We are sure of its place of origin, as it is indicated on the label. The living plant, on the other hand, affords more opportunities for certain anatomical observations; it admits of a better description of some characters of little importance, such as color, odor, etc. But plants in the field and forest are not named, and in Botanical Gardens they are often very badly named. The geographical origin of their plants is almost always uncertain or unknown. Individuals are often modified by cultivation and by hybridation; seldom can we see fruit along with the flower; seldom numerous individuals of the same species; and more seldom still is a botanist permitted to gather sufficient specimens of an exotic plant, so that he can examine it as he would, and can preserve the evidences to substantiate his work.

When we reflect upon these differences, we are surprised to see so much lukewarmness shown by anatomists and physiologists to all that concerns Herbaria. Without their aid these gentlemen could not be sure of the name of any plants except the most common ones. They go